

Missouri Youth Risk Behavior Survey



February 1998

Missouri Department of
Elementary and
Secondary Education

in cooperation with
Missouri Department
of Health

Acknowledgments

Sincere appreciation is extended to the students and staff of the participating high schools for their cooperation in completing the *1997 Youth Risk Behavior Survey*.

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Foreword

Fellow Missourians:

Young people today are facing serious challenges to their health and safety. While most young people in Missouri are healthy and concerned about their personal well-being, this report shows that too many adolescents are engaging in unhealthy, unsafe behaviors — from immediate threats such as using drugs or drinking and driving, to long-term health risks such as smoking. Clearly, such behaviors not only interfere with students' ability to learn at an optimal level, but also threaten their lives.

Health and safety are two fundamental “basics” for our children and youth to be successful in school. Therefore, we believe it is important for school officials, families and community leaders to work together to focus attention on the most serious health risks facing today's young people. Research in recent years has shown that we *can* make a difference in this area through coordinated action.

- Family members, health-care providers, educators and community leaders need to be actively involved in the lives of young people, providing information and guidance to help them make appropriate choices related to their health, safety and personal behavior.
- Through high-quality Comprehensive School Health Education programs, schools must provide the opportunities for children and youth to obtain the knowledge and skills they need to make health-enhancing decisions.
- Youth, educators, families and community leaders must work together to create safe, drug-free and nurturing environments for all young people.
- Schools and communities need to place greater emphasis on youth-oriented wellness programs and opportunities for daily physical activity.
- School and community leaders need to acknowledge the dangers confronting today's youth and take steps to *prevent* known health risks. We need to provide programs that support physical and emotional well-being for young people in every Missouri community.

The Department of Elementary and Secondary Education and the Department of Health have been working together in recent years — along with local school districts and county health officials — to improve health education and health-related services. We have made significant strides, but as the data in this report confirm, we still have much work to do. It is our hope that this report will encourage concerned Missourians to advocate for and create improved health-education services for every child in our state.



Dr. Maureen Dempsey, M.D.
Director, Missouri Department of Health



Robert E. Bartman
Commissioner of Education

1997 Missouri Youth Risk Behavior Survey

Executive Summary

The 1997 Missouri Youth Risk Behavior Survey revealed some positive findings and also some troublesome results.

GOOD NEWS

Statistically significant changes from 1995 to 1997 included the following:

- Chewing tobacco use among males decreased
- Fewer students under the age of 18 purchased cigarettes at a store or gas station
- Fewer students ate high-fat foods such as hamburgers, hot dogs and french fries

TROUBLING NEWS

Statistically significant changes from 1995 to 1997 included the following:

- Marijuana use increased among students in grade 12
- Marijuana use on school property increased among students in grade 12
- Fewer parents or family members talked with students about AIDS or HIV infection, particularly with female students

Although significant changes did not occur from 1995 to 1997, some behaviors remain troubling. Prior to the survey in 1997, of students in grades 9-12

- 51% drank alcohol
- 40% rode in a car with someone who had been drinking
- 40% smoked cigarettes
- 37% had sexual intercourse
- 33% were in a physical fight
- 29% rarely or never wore a seatbelt when riding in a car
- 28% used marijuana

What Is the YRBS?

The Youth Risk Behavior Survey (YRBS) is an 84-item survey administered by the Missouri Department of Elementary and Secondary Education in the spring of odd-numbered years. In 1997, 1,483 students in 22 public high schools participated. The school response rate was 81%, and the student response rate was 80%. Survey administration procedures were designed to assure the privacy and confidentiality of all participating students. Student participation was voluntary.

The students who participated in the survey constitute a valid sample of high school-age youth. The results may be used to make important inferences concerning the health-risk behaviors of all Missouri public high school students in grades 9 through 12.

This report presents results from the 1997 Missouri YRBS, as well as data from the 1995 YRBS administered in Missouri and throughout the United States. Comparisons of results from all three surveys may be made because each used scientifically selected samples and sufficient school and student responses were obtained. Statistically significant differences between surveys are noted in the report.

The YRBS was developed by the Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention (CDC). Representatives from state and local departments of education and other federal agencies assisted in designing the questionnaire. The purpose was to establish a system to monitor health-risk behaviors that contribute to the leading causes of mortality, morbidity and social problems among youth and adults in the United States. These behaviors fall into six categories:

- Behaviors that result in unintentional and intentional injuries
- Alcohol and other drug use
- Tobacco use
- Sexual behaviors that result in HIV infection, other sexually transmitted diseases (STDs), and unintended pregnancies
- Dietary behaviors
- Physical activity

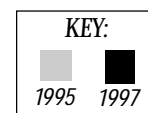
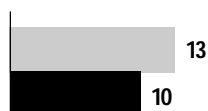
This report also provides important information about the leading causes of morbidity and mortality among adolescents in Missouri. These data, provided by the Missouri Department of Health, support the findings of the YRBS in that some Missouri high school students are engaging in behaviors which put them at risk of death, disability or potential loss of quality of life.

Summary of 1995 and 1997 YRBS Findings

RELATED TO SCHOOL PROPERTY

Percentage of Missouri students who:

Carried a weapon on school property during the past 30 days



Did not go to school on one or more of the past 30 days because they felt unsafe at school or on their way to or from school



Had been threatened or injured with a weapon on school property during the past 12 months



Had property stolen or deliberately damaged on school property during the past 12 months



Were in a physical fight on school property during the past 12 months



Smoked cigarettes on school property during the past 30 days



Used chewing tobacco or snuff on school property during the past 30 days



Had at least one drink of alcohol on school property during the past 30 days



Used marijuana on school property during the past 30 days



Had someone offer, sell or give them an illegal drug on school property during the past 12 months



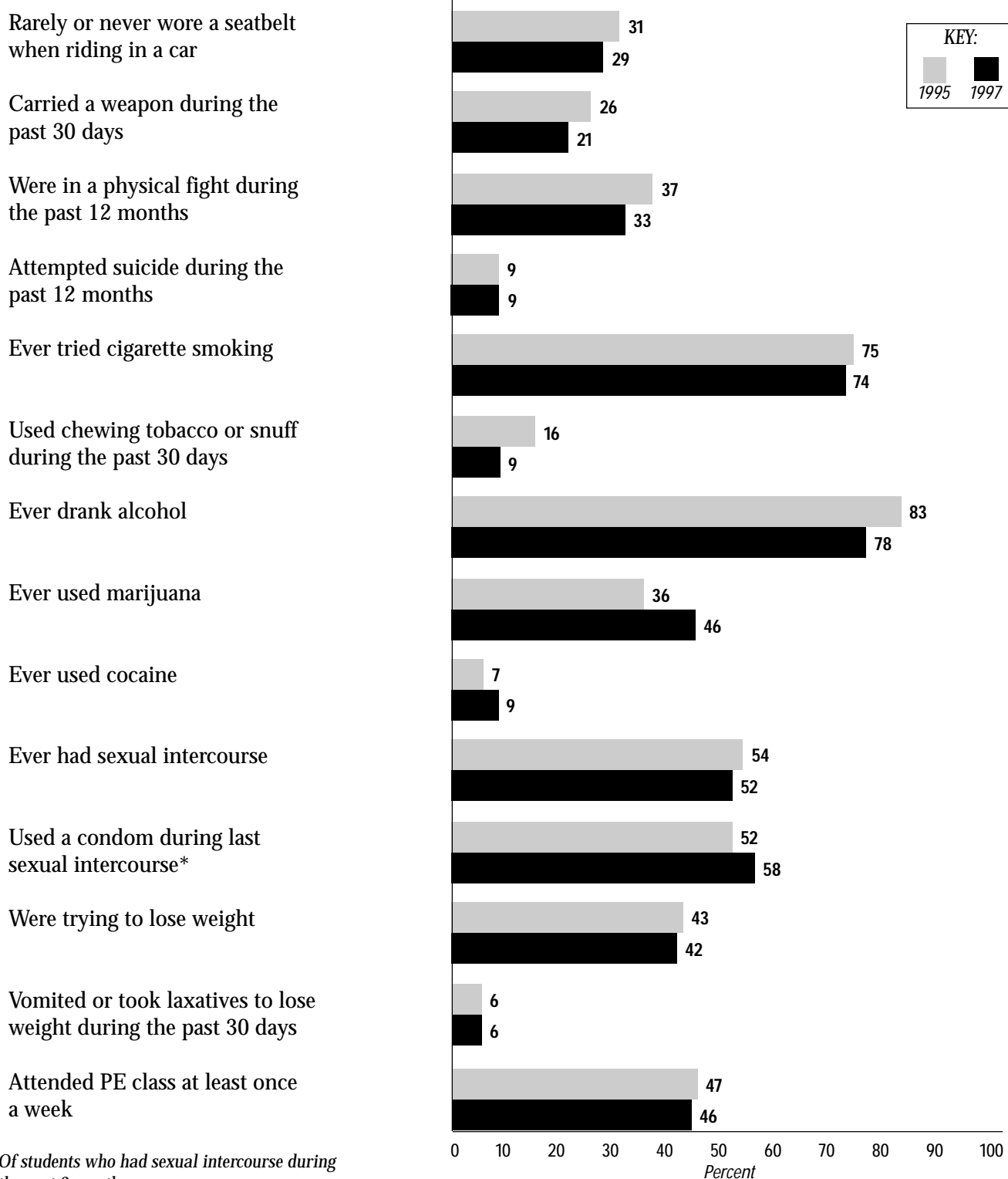
0 5 10 15 20 25 30 35 40 45 50 55
Percent



Summary of 1995 and 1997 YRBS Findings

NOT RELATED TO SCHOOL PROPERTY

Percentage of Missouri students who:



Unintentional and Intentional Injuries

MOTOR VEHICLE CRASHES

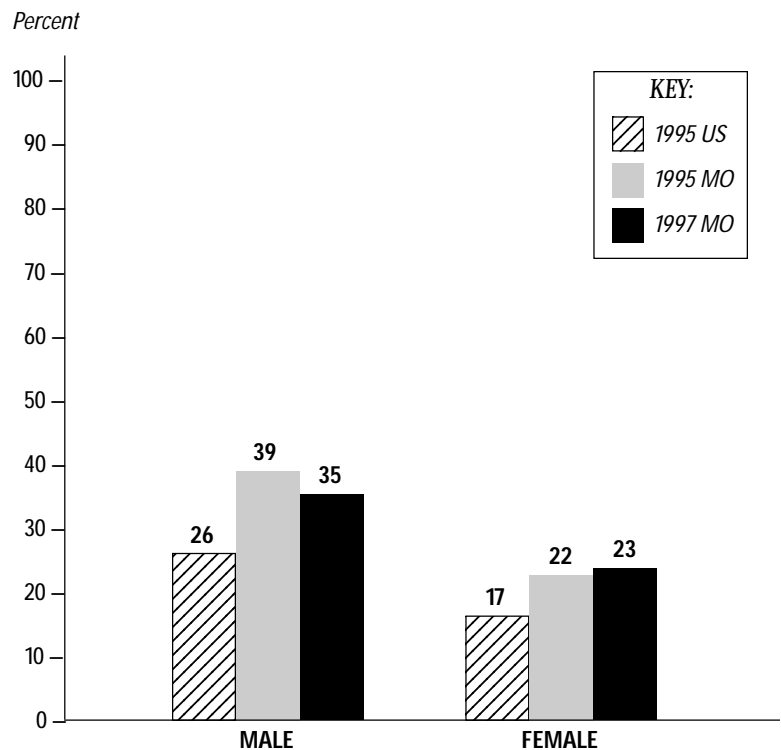
Injuries sustained as a result of motor vehicle crashes are the leading cause of death among youth ages 15-20 in the United States (*National Center for Health Statistics*) and in Missouri. (*Missouri Department of Health*)

In 1996, 160 young people ages 15-19 died in Missouri as a result of motor vehicle crashes. (*Missouri Department of Health*)

Seat belt use is estimated to reduce motor vehicle fatalities by 40% to 50% and serious injuries by 45% to 55%. (*National Committee for Injury Prevention and Control*)

• SEAT BELT USE •

Percentage of students in grades 9-12, by gender, who **never or rarely** wore a seat belt when riding in a car driven by someone else:

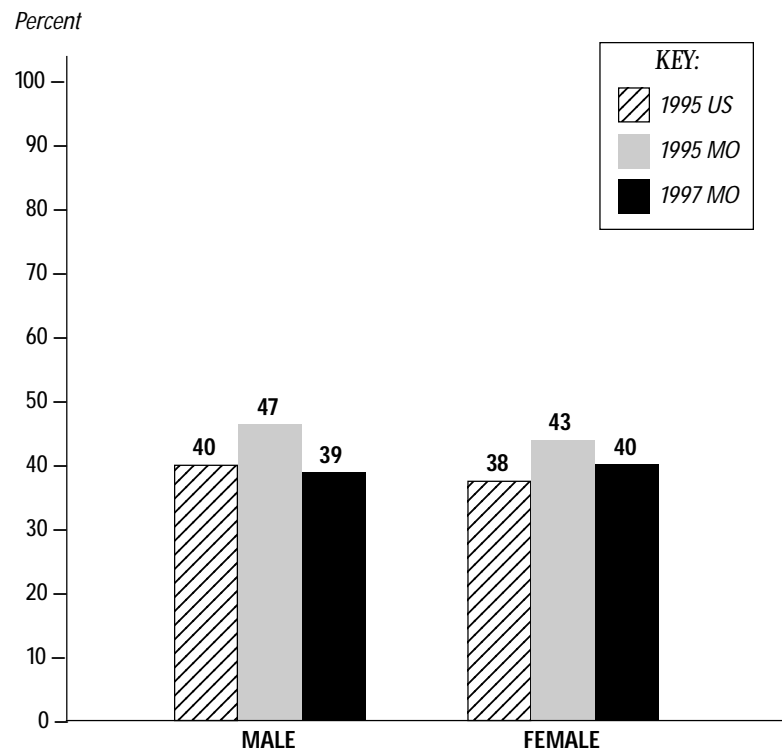


- ▶ In 1995, 21% of Missouri students in grades 9-12 always wore a seat belt, 26% wore a seat belt most of the time, and 22% wore one sometimes.
- ▶ In 1997, 24% always wore a seat belt, 26% most of the time, and 21% sometimes.

In the United States during 1988-1995, a total of 68,206 fatal crashes involved drivers aged 15-20. Of these, 65% were legally intoxicated (BACs ≥ 0.1) and 27% had been drinking (BACs ≥ 0.01). (*National Center for Injury Prevention and Control*)

• DRINKING AND DRIVING •

Percentage of students in grades 9-12, by gender, who during the past 30 days rode one or more times in a car or other vehicle driven by someone who had been drinking alcohol:



Percentage of Missouri students in grades 11 and 12, by gender, who during the past 30 days drove a car or other vehicle one or more times when they had been drinking alcohol:

Year	Grade 11		Grade 12	
	Male	Female	Male	Female
1995	36%	23%	35%	26%
1997	26%	21%	43%	32%

VIOLENCE

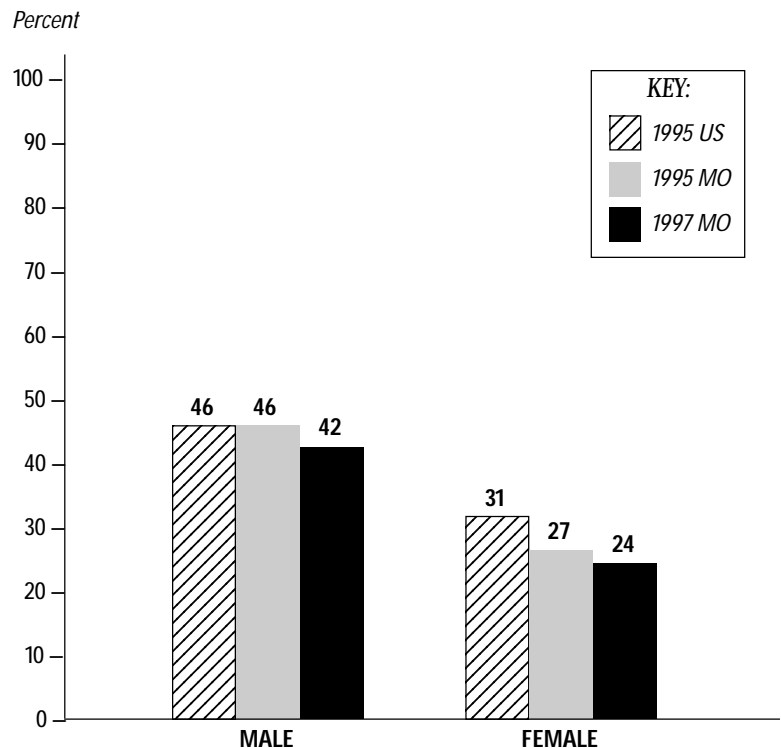
Homicide is the second-leading cause of death among American youth ages 15-24 and is the leading cause of death for African-American youth ages 15-24. (*National Center for Health Statistics*)

In 1996, 60 Missouri young people ages 15-19, and eleven 10- to 14-year-olds died due to homicide.
(*Missouri Department of Health*)

Fatal violence typically is preceded by a physical altercation, often with an acquaintance. (*U.S. Department of Health and Human Services*)

• PHYSICAL FIGHTING •

Percentage of students in grades 9-12, by gender, who were in a physical fight one or more times during the past 12 months:

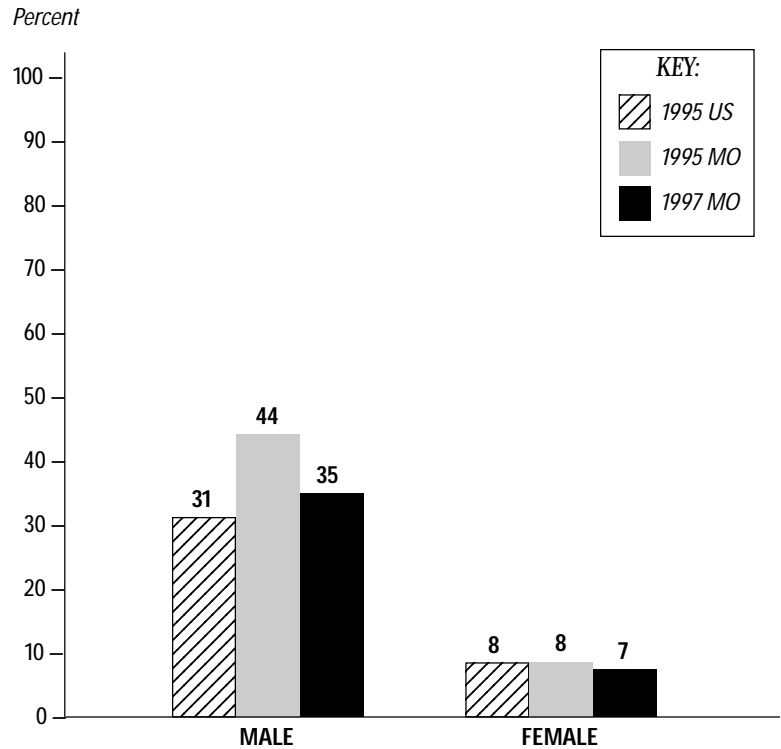


- ▶ In 1995, 44% of Missouri students in grade 9 had been in a physical fight compared to 26% of students in grade 12. In 1997, 41% of students in grade 9 fought compared to 28% of students in grade 12.
- ▶ In 1995, 25% of Missouri students in grades 9-12 fought with a friend or with someone they knew the last time they were in a physical fight. In 1997, 27% fought with a friend or with an acquaintance.
- ▶ In 1995, 5% of Missouri students in grades 9-12 were injured in a physical fight during the past 12 months and had to be treated by a doctor or nurse. In 1996, 4% required medical treatment as a result of a physical fight.

The immediate accessibility of a firearm or other lethal weapon often is the factor that turns a violent altercation into a lethal event. (Sloan)

• WEAPON CARRYING •

Percentage of students in grades 9-12, by gender, who carried a weapon such as a gun, knife or club on one or more of the past 30 days:**



Percentage of Missouri students in grades 9-12, by race, who were in a physical fight one or more times in the past 12 months and who carried a weapon during the past 30 days:**

	1995		1997	
	White	Black	White	Black
Fought	35%	52%	31%	38%*
Carried Weapon	25%	33%	20%	20%*

* Represents a statistically significant decrease from 1995

**Not necessarily on school property.

SUICIDE

Suicide is the third leading cause of death among youth ages 15-24. (*National Center for Health Statistics*)

In 1996, 45 Missouri young people ages 15-19 died as a result of suicide. (*Missouri Department of Health*)

Percentage of students who in the past 12 months:

	Seriously considered attempting suicide				Made a plan about how they would attempt suicide				Actually attempted suicide one or more times			
	1995		1997		1995		1997		1995		1997	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
MO	20%	29%	18%	27%	17%	22%	12%	19%	7%	11%	7%	11%
US	18%	30%	NA	NA	14%	21%	NA	NA	6%	12%	NA	NA

NA – Not Available



HELMET USE

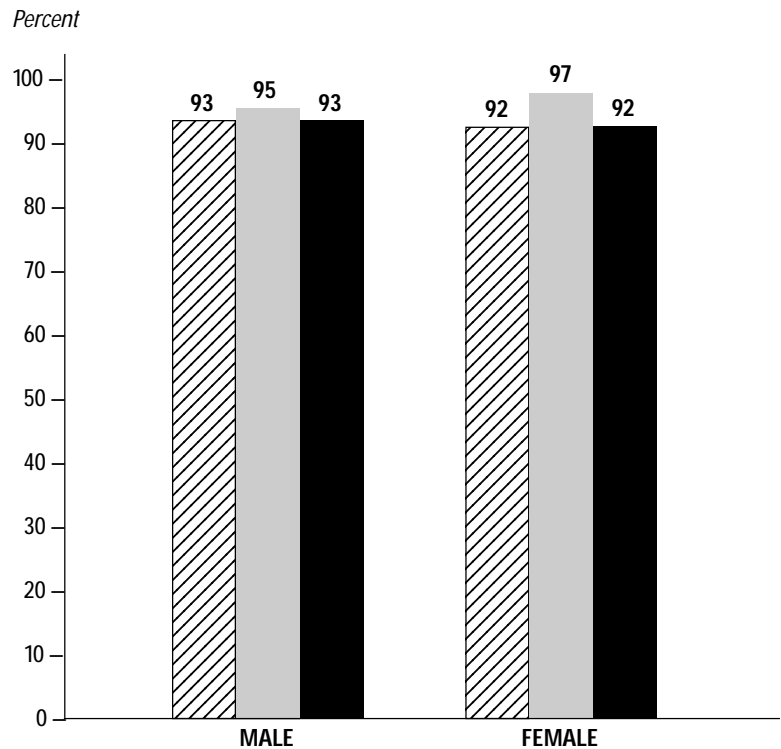
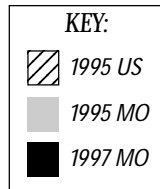
Head injury is the leading cause of death in motorcycle and bicycle crashes. (Sosin) Unhelmeted motorcyclists are two times more likely to incur a fatal head injury and three times more likely to incur a nonfatal injury than helmeted riders. (National Highway Traffic Safety Administration)

- ▶ In 1995, 41% of Missouri males in grades 9-12 rode a motorcycle of which 47% never or rarely wore a motorcycle helmet.
- ▶ In 1997, of the Missouri males in grades 9-12 who rode a motorcycle during the past 12 months (29%), 46% reported never or rarely ever wearing a motorcycle helmet.

The risk of head injury for unhelmeted bicyclists is more than 6.5 times greater than helmeted riders. (Thompson)

- ▶ In 1995, 60% of Missouri students in grades 9-12 reported riding a bicycle one or more times during the past 12 months. In 1997, 66% rode a bicycle in the previous year.

Percentage of students, by gender, who *never or rarely* wore a helmet when riding a bicycle:

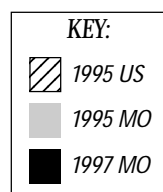


Alcohol and Other Drug Use

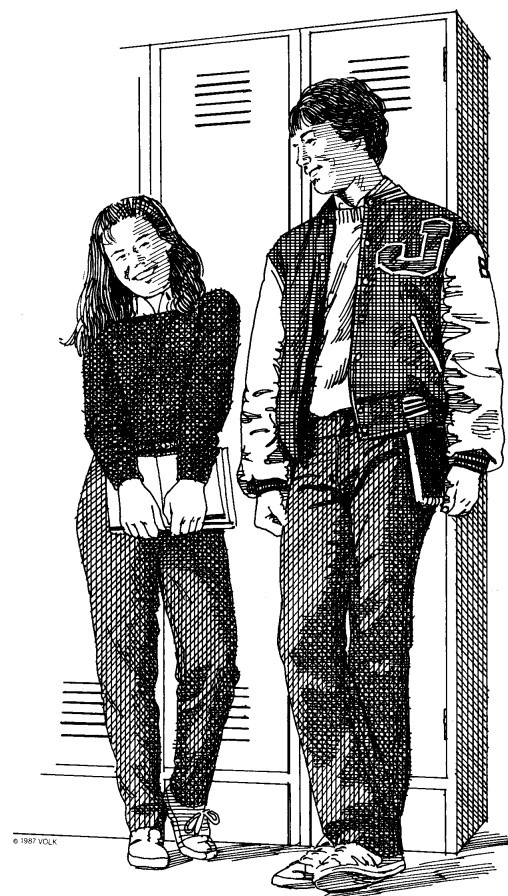
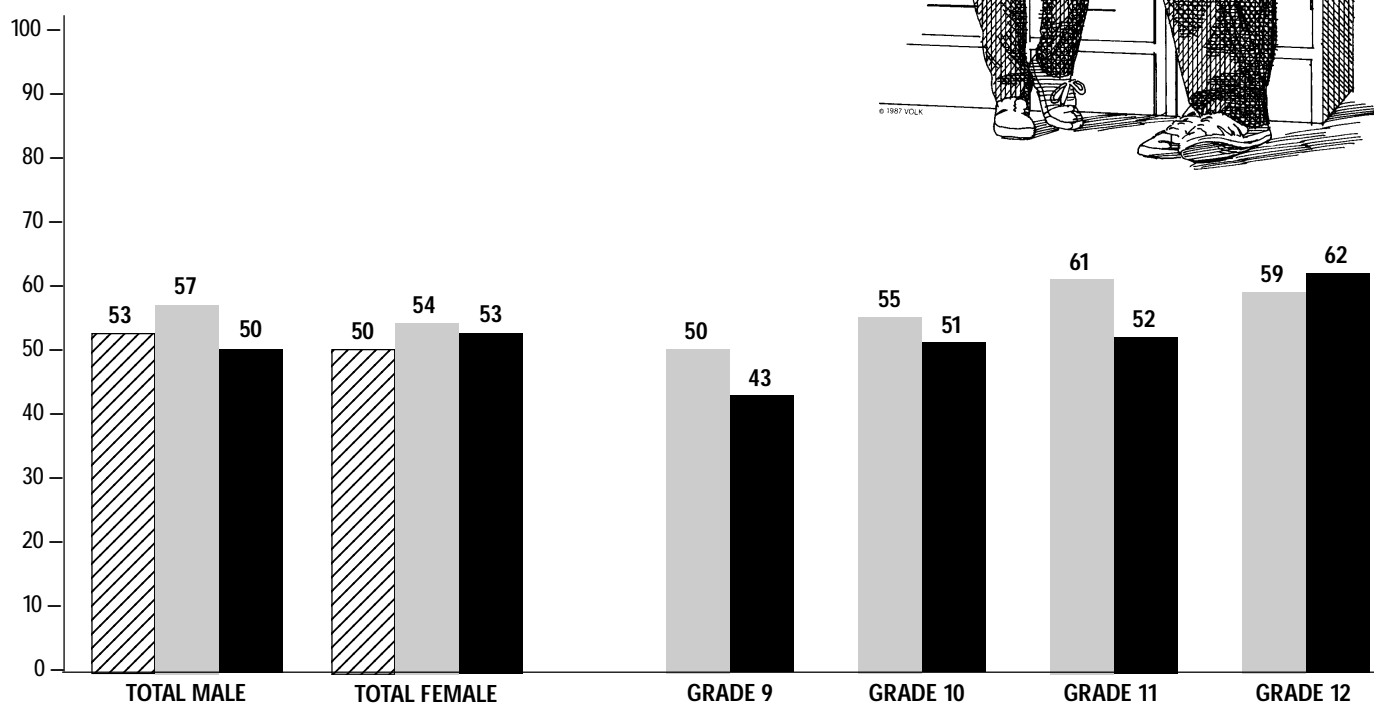
Alcohol is a major contributing factor in approximately one-half of all homicides, suicides, and motor vehicle crashes which are the leading causes of death and disability among young people. (Perrine) Heavy drinking among youth has been linked conclusively to physical fights, destroyed property, academic and job problems, and trouble with law enforcement authorities. (U.S. Department of Health and Human Services)

CURRENT ALCOHOL USE

Percentage of students in grades 9-12, by gender and grade, who had at least one drink of alcohol on one or more of the past 30 days:

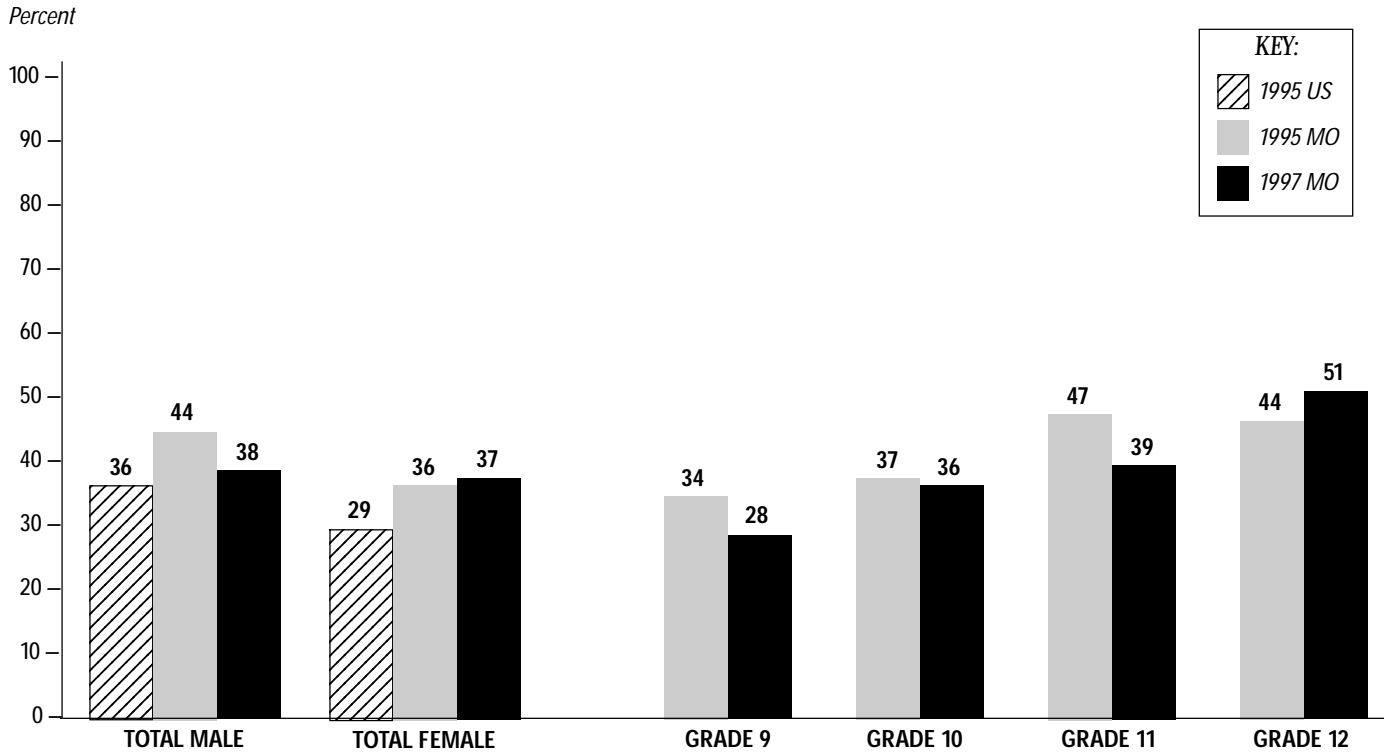


Percent



HEAVY ALCOHOL USE

Percentage of students in grades 9-12, by gender and grade, who had five or more drinks of alcohol in a row within a couple of hours on one or more of the past 30 days:



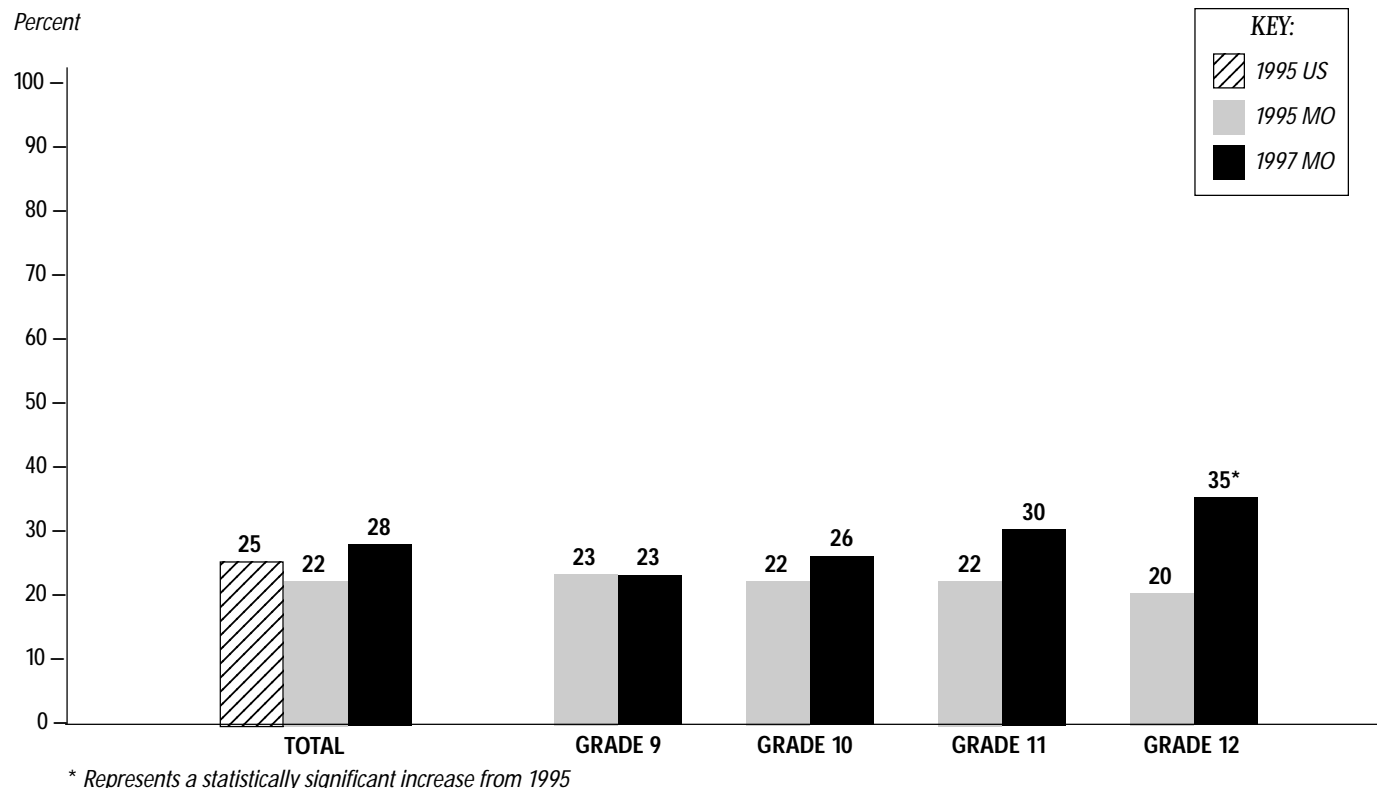
FIRST USE

Percentage of students in grades 9-12 who used the following before the age of 13:

	Cigarette	Alcohol	Marijuana	Cocaine
1995 US	25%	32%	8%	1%
1995 MO	32%	40%	8%	2%
1997 MO	27%	34%	10%	2%

MARIJUANA USE

Percentage of students in grades 9-12, by grade, who used marijuana on one or more of the past 30 days:



OTHER DRUG USE

Percentage of students in grades 9-12 who on one or more of the past 30 days used:

	Cocaine		Other Illegal*		Steroids	
	Male	Female	Male	Female	Male	Female
1995 US	4%	2%	18%	14%	5%	2%
1995 MO	6%	3%	18%	16%	7%	3%
1997 MO	6%	4%	18%	16%	5%	3%

* Illegal drugs such as LSD, PCP, Ecstasy, mushrooms, speed, ice or heroin

Methamphetamine (also known as *speed*, *ice*, *crank*, *crystal* and *go*) is the most widely illegally manufactured, distributed and abused type of amphetamine, a class of stimulant drug. (*Substance Abuse and Mental Health Services Administration*)

Tobacco Use

Cigarette smoking, which accounts for 20% of all deaths, is the chief preventable cause of death in the United States. Smoking is attributed to causing deaths due to cardiovascular disease, chronic airway obstruction, and cancers of the lung, larynx, mouth, esophagus and bladder. (CDC)

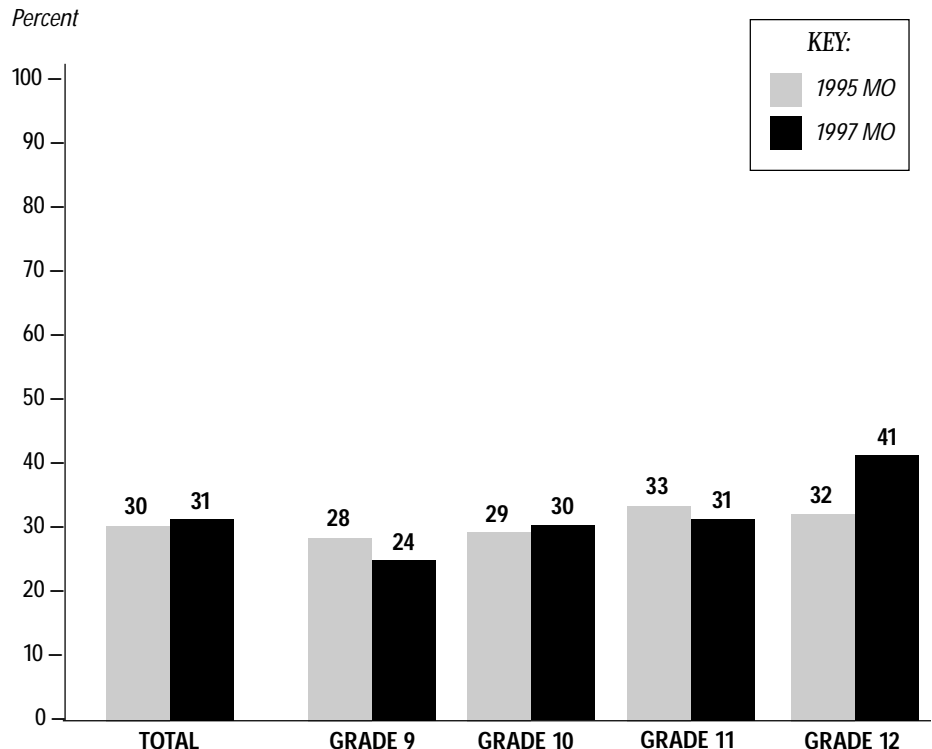
Prevalence of smoking among U.S. adolescents has been increasing since 1992, and if the current patterns continue into adulthood, over 5 million persons who were under the age of 18 in 1995 will die prematurely from smoking-related illnesses. (CDC)

Percentage of students who:

	CURRENT CIGARETTE USE		FREQUENT CIGARETTE USE	
	Smoked on one or more of the past 30 days		Smoked on 20 or more of the past 30 days	
	Male	Female	Male	Female
1995 US	35%	34%	16%	16%
1995 MO	40%	39%	21%	21%
1997 MO	40%	41%	23%	25%

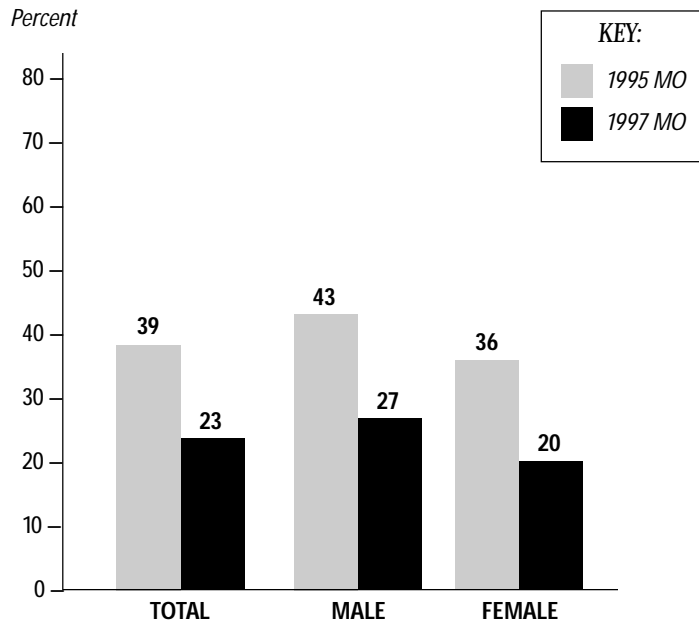
• HEAVY TOBACCO USE •

Percentage of Missouri students in grades 9-12, by grade, who smoked two or more cigarettes per day on the days they smoked:

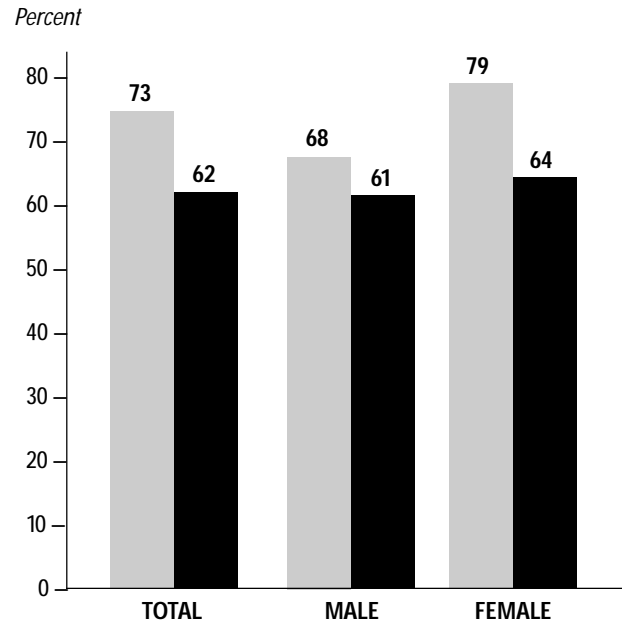


CIGARETTE ACCESS IN MISSOURI

Percentage of students 18 years of age or younger who were current cigarette smokers and reported purchasing cigarettes at a store or gas station during the past 30 days:

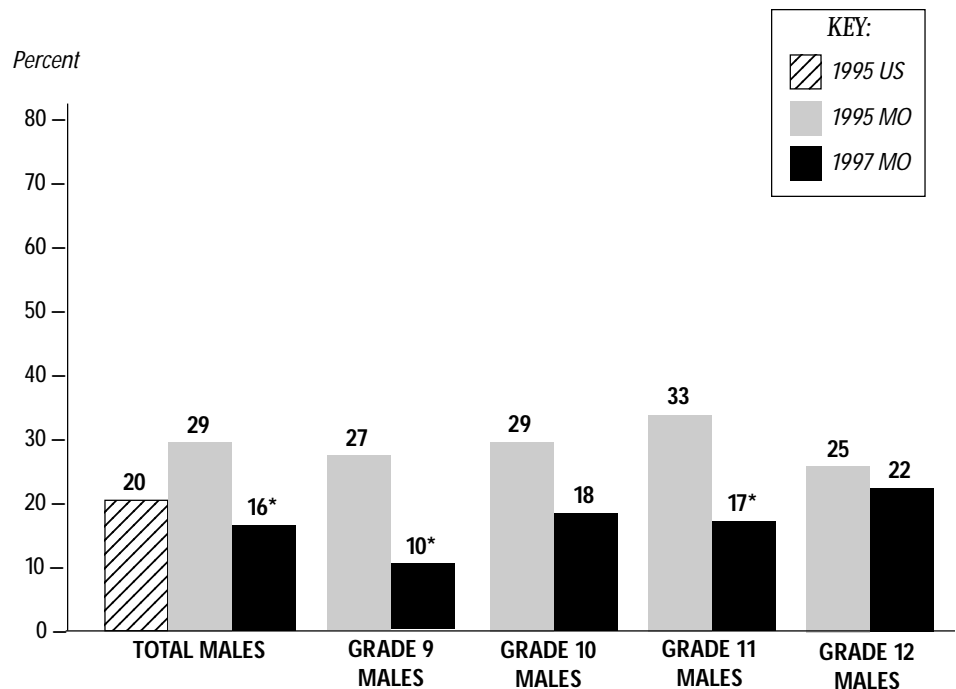


Percentage of students 18 years of age or younger who were current cigarette smokers and were NOT asked to show proof of age when purchasing cigarettes during the past 30 days:



SMOKELESS TOBACCO USE

Percentage of male students, by grade, that used chewing tobacco or snuff on one or more of the past 30 days:



* Represents a statistically significant decrease from 1995

Sexual Behavior

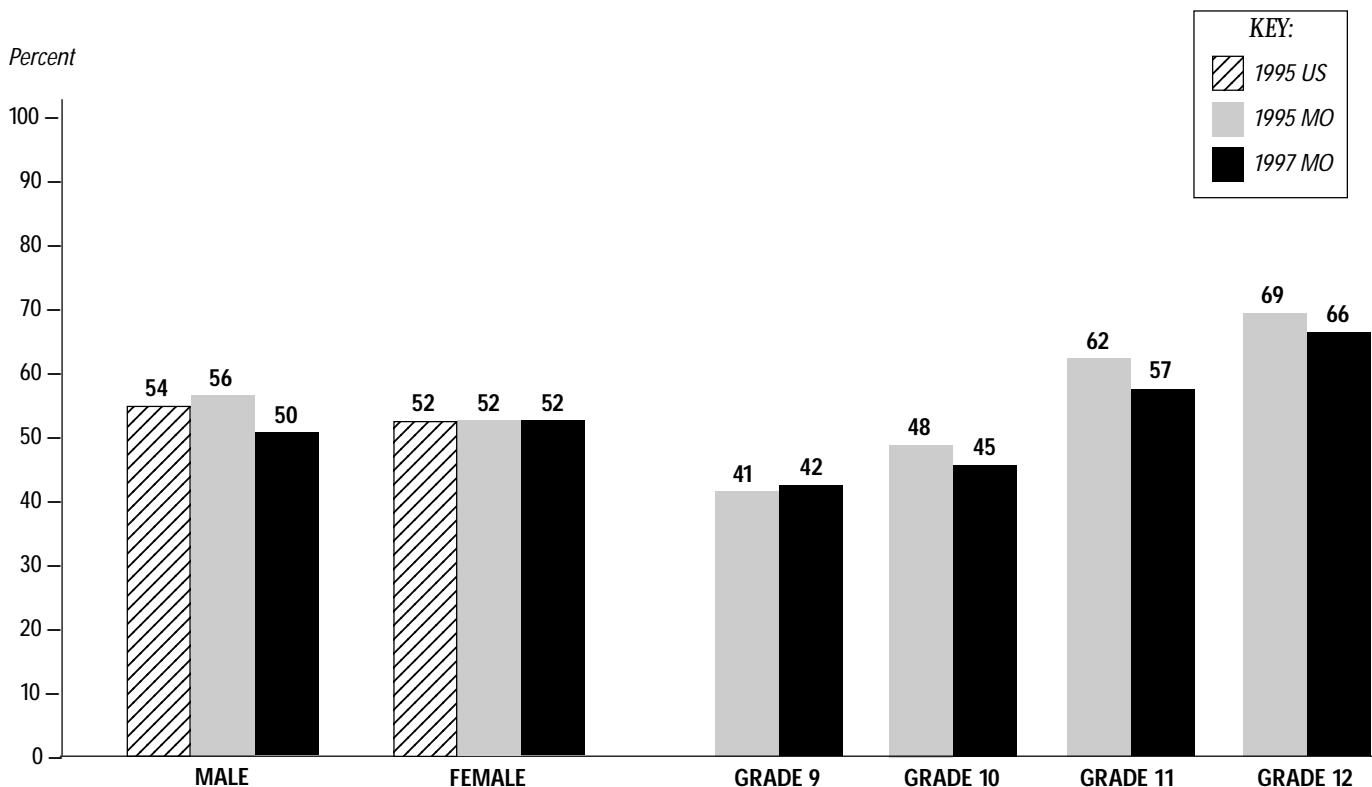
Early and unprotected sexual intercourse among adolescents may result in unintended pregnancy and sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) which causes acquired immunodeficiency syndrome (AIDS). More reported cases of Chlamydia occur among adolescent females than any other group. From January through June 1997, 1,605 cases were reported among Missouri females ages 15-19, accounting for 28% of total cases (*Missouri Department of Health*). As of June 1997, 41% of cumulative reported HIV cases in Missouri occurred among 20- to 29-year-olds, more than in any other age group. (*Missouri Department of Health*).

Unintended pregnancy often results in educational and economic deprivation. Eighty percent of adolescent parents drop out of school (*University of Missouri Extension*). In Missouri during 1996, there were 5,035 pregnancies to females under the age of 18 which resulted in 3,218 infants being born out-of-wedlock (*Missouri Department of Health*). There were 3,635 live births to females ages 15-17 and 181 live births to females under the age of 15.

In 1996, 150 Missouri 14-year-olds, 28 13-year-olds, and 3 12-year-olds gave birth. (*Missouri Department of Health*)

SEXUAL INTERCOURSE – Lifetime

Percentage of students in grades 9-12, by gender and grade, who ever had sexual intercourse in their lifetime:



FIRST SEXUAL INTERCOURSE

Percentage of students in grades 9-12, by gender, who had sexual intercourse before the age of 13:

	1995		1997	
	Male	Female	Male	Female
US	13%	5%	NA	NA
MO	14%	4%	12%	5%

NA – Not Available

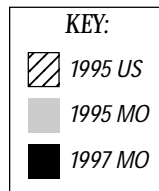
- In 1995, 12% of Missouri students in grade 9 had sexual intercourse before the age of 13. In 1997, 14% of students in grade 9 had engaged in sexual intercourse before the age of 13.

CURRENT SEXUAL INTERCOURSE

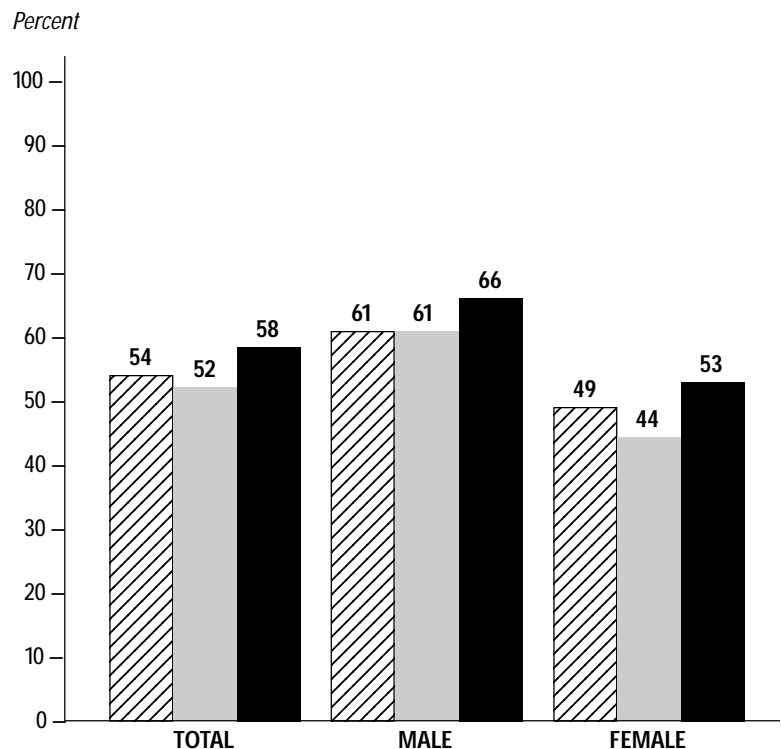
- In 1995, 39% of Missouri students in grades 9-12 had sexual intercourse during the three months prior to the survey, including 27% of the ninth graders and 55% of the twelfth graders. In 1997, 37% had sexual intercourse in the previous three months (26% ninth grade, 34% tenth grade, 42% eleventh grade and 49% twelfth grade).

CURRENT CONDOM USE

Of students who had sexual intercourse during the past three months, the percentage of students in grades 9-12, by gender, who used a condom* during the last sexual intercourse:



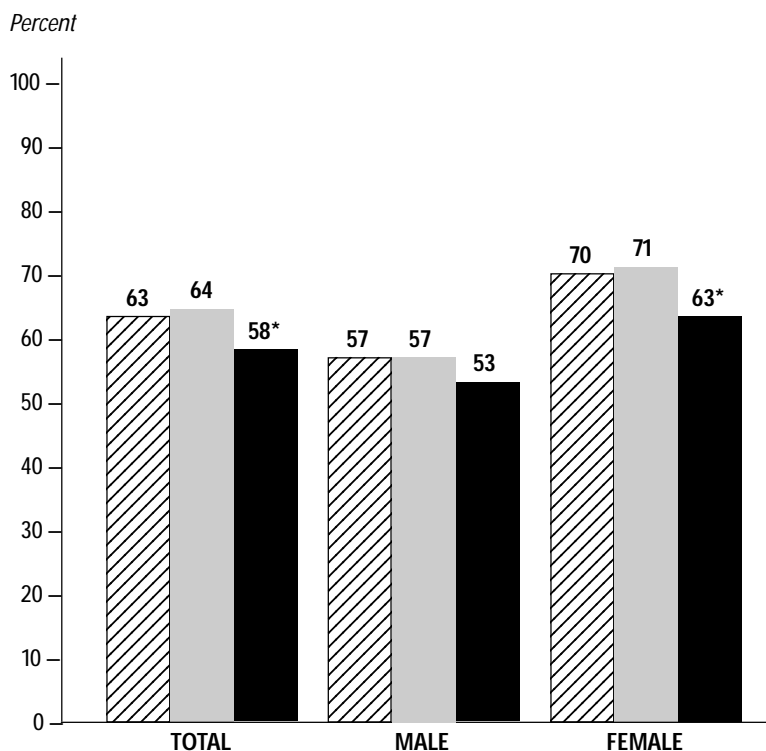
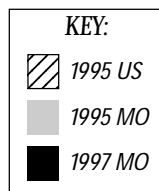
* Self or partner



AIDS/HIV EDUCATION

• PARENTS OR FAMILY •

Percentage of students, by gender, who ever talked about AIDS or HIV with parents or other adults in their family:



* Represents a statistically significant decrease from 1995

• SCHOOL •

Percentage of students in grades 9-12, by grade, who were ever taught about AIDS or HIV infection in school:

	Total	Grade 9	Grade 10	Grade 11	Grade 12
1995 US	86%	NA	NA	NA	NA
1995 MO	86%	84%	87%	86%	90%
1997 MO	89%	88%	89%	88%	92%

NA – Not Available

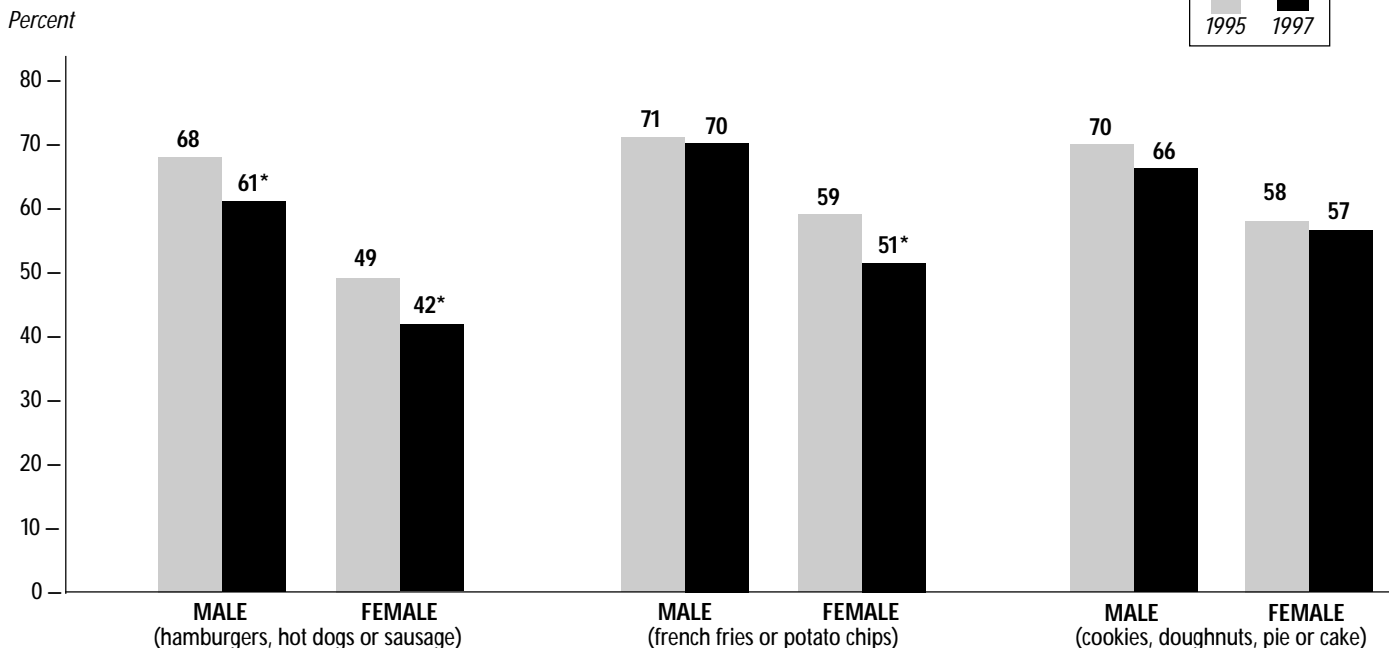
Dietary Behaviors

Healthy eating patterns in childhood and adolescence promote optimal childhood health, growth and intellectual development; prevent immediate health problems, such as iron deficiency anemia, obesity, eating disorders, and dental caries; and may prevent long-term health problems such as coronary heart disease, cancer, and stroke. (*U.S. Department of Health and Human Services*)

Overweight and obesity are increasing among children and adolescents in the United States. The prevalence of overweight among youths ages 6-17 years has more than doubled in the past 30 years, and most of the increase has occurred since the late 1970s, with approximately 4.7 million or 11%, of youth seriously overweight. (*Troiano*) Children and adolescents obtain 33-35% of their calories from fat and 12-13% from saturated fat, which are above the recommended levels of 30% and 10% respectively. (*Tippett*)

• HIGH FAT CONTENT FOODS •

Percentage of Missouri students in grades 9-12, by gender, who ate the following one or more times on the day prior to the survey:



• FRUITS AND VEGETABLES •

Percentage of Missouri students in grades 9-12, by gender, who ate the following one or more times on the day prior to the survey:

	1995		1997	
	Male	Female	Male	Female
Fruit	62%	59%	66%	59%
Fruit juice	59%	54%	65%	58%
Green salad	29%	28%	32%	31%
Cooked vegetables	52%	48%	48%	47%

WEIGHT LOSS AND CONTROL

Some young people adopt unsafe weight-loss methods. Eating disorders (e.g., anorexia nervosa and bulimia nervosa) are psychological disorders characterized by severe disturbances in eating behavior which often begin in adolescence, with more than 90% affecting females. (*American Psychiatric Association*)

The best way to lose weight is to increase physical activity and control caloric intake, preferably by adopting a diet that is low in fat and high in vegetables, fruits and grains. (*U.S. Department of Agriculture and U.S. Department of Health and Human Services*)

- ▶ In 1995, 31% of Missouri students in grades 9-12 described themselves as slightly or very overweight (38% female, 23% male). In 1997, 28% said they were overweight (35% female, 21% male).
- ▶ In 1995, 43% of Missouri students in grades 9-12 said they were trying to lose weight (62% female, 24% male). In 1997, 42% were trying to lose weight (59% female, 26% male).

• WEIGHT LOSS AND CONTROL METHODS •

Percentage of Missouri students in grades 9-12, by gender, who used the following methods to control or lose weight during the 30 days prior to the survey:

	1995		1997	
	Male	Female	Male	Female
Dieted	13%	49%	18%	44%
Exercised	36%	66%	42%	65%
Diet pills	3%	11%	3%	12%
Vomited or laxatives	3%	9%	3%	9%

• FEMALE SMOKING AND WEIGHT CONTROL •

Data from one study indicated that the rate of smoking initiation is higher for adolescent girls who diet or who are concerned about their weight than for non-dieters or girls having few weight concerns. (*French*) Another study indicated that many white female high school students who smoke report using smoking to control their appetite and weight. (*Camp*)

- ▶ In 1995, 41% of white Missouri females in grades 9-12 smoked cigarettes on one or more of the 30 days previous to the survey. In 1997, 46% smoked cigarettes.

Physical Activity

Regular moderate physical activity results in health benefits among children and adolescents. Benefits include improved aerobic endurance and muscular strength (*Sallis*), reduced overweight in obese children (*Gutin*), and higher levels of self-esteem and self-concept and lower levels of anxiety and stress. (*Calfas*)

Physically active and physically fit adults are less likely than sedentary adults to develop chronic diseases that cause most of the morbidity and mortality in the United States: cardiovascular disease, hypertension, diabetes, and colon cancer. (*Paffenbarger*) All-cause mortality rates are lower among physically active than sedentary people. (*Haapanen*)

Physical activity among both girls and boys tends to decline steadily during adolescence. (*U.S. Centers for Disease Control and Prevention*) People begin to acquire and establish patterns of health-related behaviors during childhood and adolescence (*Kelder*); thus, young people should be encouraged to engage in regular physical activity through quality school physical education, as well as on their own.

• DURING SCHOOL PHYSICAL EDUCATION •

- ▶ In 1997, 46% of Missouri students in grades 9-12 attended physical education class one or more days in an average school week (grade 9 – 77%, grade 10 – 40%, grade 11 – 29%, grade 12 – 32%).
- ▶ In 1997, 37% of Missouri students in grades 9-12 exercised or played sports for more than 20 minutes during an average physical education class (45% males, 29% females).

• TYPES OF PHYSICAL ACTIVITY •

Percentage of Missouri students in grades 9-12, by gender, who participated in the following three or more days during the seven days prior to the survey:

Activity	1995		1997	
	Male	Female	Male	Female
Vigorous activity*	73%	52%	73%	49%
Moderate activity**	33%	34%	33%	32%
Stretching	53%	53%	53%	48%
Strengthening/Toning	57%	43%	57%	44%

* Vigorous activity – Exercised or participated in sports activities for at least 20 minutes that made them sweat and breathe hard

** Moderate activity – Walked or bicycled for at least 30 minutes at a time

Conclusion

Decreases in several health-risk behaviors occurred among Missouri public high school students between 1995 and 1997. Although these findings are encouraging, efforts to educate young people about their health must continue so that a downward trend is established and continued over time.

Information in this report can be used to:

- **Encourage** more parents and family members to talk with young people about their expectations to engage in health-enhancing behaviors and to avoid health-risk behaviors.
- **Advocate** that effective health education and physical activity programming in schools and communities be increased or at least maintained to support the efforts of families in educating young people about their health.
- **Educate** students that not all of their peers are engaging in health-risk behaviors. Such efforts can reduce the pressure that adolescents may feel to participate in unhealthy behaviors. Programs which have demonstrated effectiveness in reducing health-risk behaviors among young people include strategies to change this misperception of normative behavior.
- **Engage** young people in planning programs to reduce health risk behaviors among their peers.
- **Solicit** the assistance of the media in targeting more positive messages to young people in order to change the perception that all young people are engaging in unhealthy behaviors.



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